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## THE GREAT SUN-SPOT OF JANUARY, 1897.

On photographing the Sun with the forty-foot photoheliograph, January 5th, after two or three days of cloudy weather, I found an unusually large spot well-started on its journey across the disc. It could have been seen a day or two previously with suitable weather, and had undoubtedly been seen elsewhere. Occurring near a time of spot-minimum, it was of all the greater interest. I was enabled to photograph it every day from the 5th to the 11th inclusive, and on the 14th and 15th; on the latter date just as it was disappearing at the western limb. The "seeing" on January 5th was so bad that the photographs taken were very poor; those secured on the following days were much better. Figure 1 shows one of the photographs obtained on the 6th, and Figure 2 one obtained on the 8th, the spot having meanwhile changed considerably in form. The small, isolated companion-spot retained its shape with curious persistence. The extreme length of the nucleus of the principal spot is about 35,000 miles; the length over all of the great spot and its long attendant train of bits of penumbral matter, about 130,000 miles. The first, second, third, and fifth figures are enlarged three diameters from photoheliograph negatives, and have a scale of approximately 64,000 miles to the inch.

January 14th, the spot presented a most interesting appearance as it approached the western limb. Figures 3 and 4 are from negatives taken on that date. Extending easterly from the spot is a fine cluster of faculæ.

Figure 4 is a full-size reproduction of a negative by Mr. PERRINE and myself, using the photographic correcting-lens of the thirty-six-inch equatorial, a rapid shutter made especially for this work and presented to the observatory by Dr. A. B. THAW, and a supplementary lens for enlarging directly, giving a scale about eight times as large as that of the focal image. The negative from which this picture was made, is one of the best results yet obtained with this instrumental outfit. Unluckily the air was very unsteady, as is shown by the edge of the Sun and the different portions of the spot.

Figure 5 was photographed on the morning of January 15th, as the spot was on the very edge of the Sun's disc. In the original negative a faint trace of the nucleus can be seen in the midst of the penumbra. The appearance of indentation is inter-

FIG. 1.

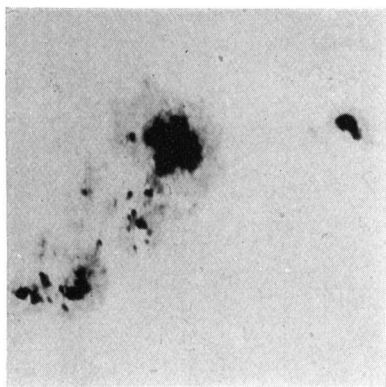


FIG. 2.

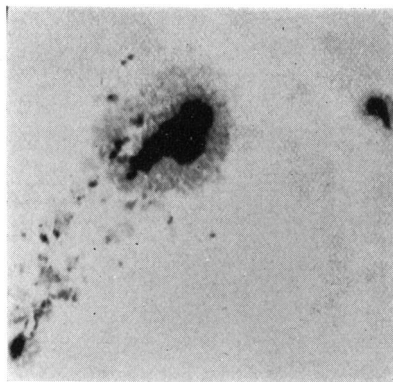


FIG. 3.



FIG. 4.



FIG. 5.



THE GREAT SUN-SPOT OF JANUARY, 1897.

esting, though it must not be ascribed to the actual depression of the spot, but rather to its deficiency in light compared to the Sun's surface. In this case, also, "bad seeing" somewhat interfered with the best results.

Owing to the great size of the spot, it will probably last for more than a revolution of the Sun, and its reappearance at the eastern limb near the end of this month will be awaited with much interest.

A. L. COLTON.

January 20, 1897.

#### THE GREAT SUN-SPOT OF JANUARY, 1897.

On Friday, January 15th, the large sun-spot, first noticed by Mr. COLTON, was passing out of view over the west limb of the Sun, and it was hoped that a favorable opportunity would thus be presented for determining the relative elevation of umbra and faculæ with respect to the photosphere. I, therefore, watched the spot with the twelve-inch equatorial, diaphragmed down to four inches aperture, using a HERSCHEL prism and a 150-power eye-piece—the highest power the seeing would permit.

At times the principal umbra appeared distinctly depressed, and the faculæ at all times seemed elevated above the average surface level; but the seeing was at no time good enough to make it certain that this was not merely the effect of irradiation. The spot was under observation from 10<sup>h</sup> 50<sup>m</sup> A. M. to 2<sup>h</sup> 30<sup>m</sup> P. M.

R. G. AITKEN.

January 19, 1897.

#### THE HELIOCENTRIC THEORY AND THE UNIVERSITY OF CAMBRIDGE IN 1669.\*

"After dinner his highness (Grand Duke COSMO III of Florence) desirous to gratify the Vice-Chancellor (of the University of Cambridge), who entreated him to honor the academy with his presence, went thither with his attendants, followed by the Vice-Chancellor and the heads of the University. In the principal hall, into which his highness was introduced, a short Latin oration was made by one of the Professors, which, being pronounced in the same manner as that which was spoken in the morning, was but little understood. And afterward his highness was

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\* One hundred and twenty-six years after the death of COPERNICUS.